
तकनीकी रिपोर्ट तैयार करने के लिए
दिशानिर्देश

भाग 1 अनुसंधान और विकास रिपोर्ट

(पहला पुनरीक्षण)

**Guidelines for Preparation of
Technical Reports**

**Part 1 Research and Development
Reports**

(*First Revision*)

ICS 37.100.99

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FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Publication & Graphic Technology Sectional Committee had been approved by the Management and Systems Division Council.

Research and development (R&D) reports have emerged as a distinctive form of technical literature brought out by various technical institutions and agencies. These reports contribute to the rapid and effective communication of information on specific topics. They introduce the results of research and development into the common fund of knowledge and permit their use as a basis for action. The effectiveness of R&D reports greatly depends on the clarity and completeness of their contents and on their presentation. At present there is no uniformity either in regard to the sequence of various elements of information in the reports or in the presentation of their content. Guidelines on these and other aspects of R & D reports will simplify their preparation and presentation and enhance their utility.

The standard was first published in 1976. This revision has been brought out to bring the standard in the latest style and format of the Indian Standard.

This standard (Part 1) is a part of IS 8010 series of standards under the general title ‘Guidelines for preparation of technical reports’. Other parts in this series are:

- | | |
|--------|-------------------------------------|
| Part 2 | Feasibility reports |
| Part 3 | Industrial potential survey reports |

The composition of the Committee responsible for formulation of the standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***GUIDELINES FOR PREPARATION OF TECHNICAL REPORTS****PART 1 RESEARCH AND DEVELOPMENT REPORTS***(First Revision)***1 SCOPE**

This standard (Part 1) provides guidelines for the presentation and production aspects of research and development reports.

2 REFERENCES

The standard listed in Annex A contain provisions which, through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definition shall apply.

3.2 Research and Development Report — A document which states the results of, or progress made with, a research and development investigation.

4 SECTIONS OF RESEARCH AND DEVELOPMENT REPORT

4.1 The sections of a research and development report should preferably be arranged in the following order:

- a) Front Corner
- b) Preliminary Pages
 - 1) Title page;
 - 2) Summary;
 - 3) Foreword;
 - 4) Table of contents;
 - 5) Abbreviations*; and
 - 6) Sign and Symbols*.
- c) Body of the Report
 - 1) Introduction;
 - 2) Theory;
 - 3) Experimental part;
 - 4) Discussion; and

- 5) Conclusions and recommendations.

d) End Matter

- 1) Acknowledgement;
- 2) References;
- 3) Appendices;
- 4) Table*;
- 5) Illustrations*;
- 6) Graphs*;
- 7) Bibliography; and
- 8) Index.

e) Abstract Sheets with Key Words

f) Back Cover

4.2 This standard recommends the traditional practice of presenting conclusions and conclusions after experimental procedure, results and discussion. However, for reports intended especially for management, it is advantageous to place the conclusions and recommendations immediately after the introduction.

4.2.1 This alternative arrangement may be followed if the sponsoring organizations consider it more appropriate.

4.2.2 The normal features of a research and development report are as given in **3.1**, though not all for these items find a place in a research and development report always.

4.3 Front Cover

The front cover should give the following:

- a) Report number;
- b) Title and sub-title in full;
- c) Author's name;
- d) Corporate source, that is, the name of the organization responsible for the report, its monogram and acronym; and
- e) The year and month in which the completed document is approved for reproduction.

4.3.1 Typical examples of report numbers are given below:

*If not included in the body of the report.

Example 1 and 2:

An alphanumeric designation established by the organization producing the report:

Cement Research Institute of India
Research Bulletin No. 2, 2014, appears as:
CRI-RB-2-14

Indian Space Research Organization – Vikram
Sarabhai Space Centre Technical Memorandum
No. 155, 2015, appears as:
ISRO-VSSC-TM-155.15

Example 3:

An alphanumeric Designation established by the organization disseminating the report:

A report prepared in 2014 under contract, to the
Department of Science and Technology,
designated Technical Report No. 154 by the
Indian National Scientific Documentation Centre
(INSDOC) appears as:
INSDOC-TR- 154-14

Example 4:

An alphanumeric designation derived from the
contract, grant or agreement number of the
sponsoring body:

A report prepared in 2014 under contract to the
Bhabha Atomic Research Centre, designated as
a BARC Extra-Mural Research Progress Report
under contract number 1743 appears as:
BARC-EMR-PR- 1743-14

4.3.1.1 The number of characters in the report number, including conventional signs and spaces shall be kept to a minimum and shall not exceed 32. This is to facilitate computer processing.

4.3.1.2 The report number shall be printed horizontally in the top right-hand corner of the front cover. It shall also be printed vertically at the top left-hand corner and vertically in the bottom right-hand corner and may be suitably coloured to facilitate identification.

4.4 Title-Page

The title page shall include the following:

- a) Report Number;
- b) Title and sub-title;
- c) Author's name;
- d) Approving authority, if any;
- e) Corporate source;
- f) Year and month of the report;
- g) Price, if any, and the sales point if different from the corporate source; and
- h) Security classification, if any.

4.4.1 Back of the Title Page

Any special notices required sponsoring authority shall be given on the back of the title page, for example, limitations on reproductions, security, legal information, safety precautions, and disposal instructions. Organizations issuing reports to which restrictions apply shall, if possible, indicate the period for which the restrictions remain in force.

4.4.2 Information given on both the front cover and the title-page shall appear, as far as possible, in similar positions.

4.4.3 The title should be concise and should indicate clearly the subject of the report.

4.4.4 The title of a progress report shall specify the period covered.

4.5 Summary

The summary should be an informative precis of the entire work. A concise description of the methods, results and significance of the work should be included. A mere expansion of the title should be avoided. The emphasis to be placed on various aspects will depend on the nature of the work being reported. Particular attention should be paid to the writing of the summary as it is one of the most important elements of the report.

The summary should normally appear on the page following the title-page.

4.6 Foreword

A foreword designed to define and emphasize the background of the study may be given on the page immediately following the summary page, and before the table of contents.

4.7 Table of Contents

The table of contents shall follow the foreword and shall begin on the succeeding page. The principal headings shall be listed verbatim and in the order in which they appear in the report with the page number on which each of them begins.

4.7.1 Where two or more parts of a multi-section report are produced simultaneously, the complete table of contents shall appear in the first part. The second and Subsequent parts shall contain a table of contents specific to that particular volume.

4.7.2 Each section of a multi-section report shall contain a statement of the plan of the whole work and the intended total number of sections and scope of each, as well as a table of contents specific to that particular section. The final volume shall contain a complete contents list for the whole series. Where a multi-section report is produced in parts at intervals of time a full table of contents should be included as

an addendum to the final volume.

4.8 Introduction

Every report shall have an introduction which should include in the first paragraph a succinct statement of the objective and the scope of the work reported. The introduction should relate the work described to the historical background with salient features in a concise manner. It should avoid a detailed discussion of the results as a repetition of the discussion section, nor should it be a sample repetition of the contents of the summary.

4.9 Theory

In certain cases, the report may be primarily of a theoretical rather than an experimental nature. In such cases, theory should be substituted for experimental procedure and results. Where results embrace a detailed theoretical treatise in addition to the experimental work, theory shall precede experimental procedure and results.

4.10 Experimental Part

This section concerns the manner in which the work was carried out and the results obtained. Emphasis should be given to anything new only very brief details of standard apparatus and techniques should be presented. If it is desired to bring out experimental aspects in greater detail, these should be given in an appendix.

4.10.1 As a general guide, details should be just sufficient to enable an adequately skilled or knowledgeable worker in the field to retrace the steps of the investigation without undue difficulty.

4.10.2 Normally the experimental section will embrace a number of subsections for clear presentation of the subject matter.

4.10.3 The results should form the ultimate subsections.

4.11 Discussion

The discussion is the interpretation of, and/or commentary on, the results and the reasoning on which the conclusions are founded. It may also attempt to shed light on the work in terms of new or extended principles or theories in the field covered. A separate section should be formed wherever it is practicable even though it may be difficult to separate discussion from the preceding experimental procedure and results.

4.12 Conclusions and Recommendations

Conclusions and recommendations should be clear and precise.

4.12.1 Conclusions represent a clear and orderly

presentation of the deductions made after full consideration of the results of the work. Quantitative data are not inappropriate but the details of an involved argument or result should not be included.

4.12.2 Recommendations are concise statements of further action considered necessary as a result of the conclusions reached. They arise directly from the conclusions and should be fully justified by the work covered in the report.

4.13 Acknowledgements

Acknowledgements of help given in carrying out the reported work or in preparing the report should be made in a section succeeding the discussion.

4.14 References

References shall be provided for works mentioned in the text and shall be listed and numbered in the order in which they first appear in the text. The bibliographical form shall conform to IS 2381 : 2014. Where an original source is quoted from an intermediary source, both shall be cited, with the intermediary preceded by the words 'Quoted in'. To avoid ambiguity, it is recommended that titles of periodicals should be abbreviated in accordance with IS 18 : 1999.

4.15 Appendices

Appendices give detailed explanations of methods and techniques summarized in the main text together with supplementary matter which it would not be appropriate to include in the main body of the report.

4.16 Tables and Illustrations

Tables and illustrations should preferably appear at the appropriate places in the body of the text, but where space considerations or reprographic techniques preclude this, they may be put together to form an appendix. Tables shall conform to the recommendations given in IS 4731 : 2009 and IS 6660 : 1972.

4.17 Bibliography

This is a list of references in addition to those cited in the text of the report. If included, the bibliography should indicate whether it is comprehensive or selective.

4.18 Abbreviations

If a list of abbreviations is included it shall be at the position indicated in **4.1 (b)**. The list should contain only those abbreviations which are not in common usage. At the first instance of their use in the text, abbreviations, especially acronyms, should be accompanied by an explanation of their meaning.

4.19 Signs and Symbols

Signs and symbols used in the report should comply with the relevant Indian Standards on the subjects or other generally accepted systems of nomenclature. A list of these should be given along with the units of measurement, arranged in alphabetical order at the position indicated in **4.1 (b)**. Greek symbols should be arranged separately.

4.20 Index

A lengthy report should have an index complying with IS 1275 : 2018.

4.21 Abstract

The abstract of the report shall follow the index. It should preferably be given on a separate perforated sheet and shall conform to IS 795 : 2013.

4.22 Back Cover

The back cover should not contain any material necessary to the understanding of the report.

5 PAGINATION AND NUMBERING

5.1 Page Number

Pages shall be numbered in international form of numerals consecutively throughout the report. If sheets are printed on both sides, blank pages shall be avoided wherever possible, but if they occur they shall be counted in the page numbering.

5.2 Section Number

Sections shall be numbered throughout the main body of the text and appendices. The numbering of sections in appendices shall not repeat that of the main text. International form of numerals shall be used for section numbering. If necessary, the alphabet or roman numerals may be used for appendices.

5.3 Reference Number

Identification numbers, letters or marks for literature reference shall be printed as superscripts or, if on the line, in parentheses (round brackets) immediately following the relevant word or phrase in the text. Different sequences shall be used for foot-notes and bibliographical references, for

example, letters or marks for foot-notes and numbers for bibliographical references.

5.4 Other Material

Tables, illustrations, drawings and graphs shall be numbered in international form of numerals.

6 PRODUCTION

6.1 Type

Typefaces, inter word spacing and the line spacing shall be so chosen as to facilitate reading.

6.2 Non Textual Matter

General engineering drawings shall conform to the requirements of SP 46 : 2003 and architectural and building drawings to IS 962 : 1989].

6.3 Sizes

The page and cover shall be in A4 (210 × 297 mm) or A5 (148 × 210 mm) as may be convenient

6.4 Margins

The margins for printed reports of A4 and A3 sizes are given in Table 1.

6.5 Columns

For printed reports in A5 size, text is usually presented in a single column. The left-hand margin shall be aligned. The right-hand margin, if unjustified, shall not display excessive differences of line length in continuous text, normally ± 5 percent of the notional line length. For printed reports in A4 size, two columns may be used if it is necessary to present a substantial amount of material.

6.6 Covers

Cover papers should be of sufficient strength to protect the contents for a reasonable period.

6.7 Binding

Any style of binding, giving a substantial or permanent anchorage down the left-hand side of the report is acceptable, provided it allows the text of the report to lie reasonably flat without damage to the spine.

Table 1 Recommended Margins for Technical Reports*(Clause 6.4)*

Sl No.	Position	Minimum Margins	
		A4 Size	A5 Size
(1)	(2)	(3)	(4)
i)	Back	25 mm (6 ems)	15 mm (3 ½ ems)
ii)	Head	29 mm (7 ems)	19 mm (4 ½ ems)
iii)	Fore-edge	34 mm (8 ems)	23 mm (5 ½ ems)
iv)	Tail	38 mm (9 ems)	27 mm (6 ½ ems)

NOTES

1 In the case of A4 size, if the report is centre-stitched or section-sewn the margin as recommended may be given. If it is side-stitched then the back margin should be increased by 5 mm.

2 In the case of A5 size report, the margins exclude document number and page number.

ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 18 : 1999	Information and documentation — Rules for the abbreviation of title words and titles of publications (<i>third revision</i>)	IS 2381 : 2014	Information and documentation — Guidelines for bibliographic references and citations to information resources (<i>third revision</i>)
IS 795 : 2013	Guide for preparation of abstracts (<i>second revision</i>)	IS 4731 : 2009	Guide for preparation of manuscript of an article in a learned periodical
IS 962 : 1989	Code of practice for architectural and building drawings (<i>second revision</i>)	IS 6660 : 1972	Guide for illustrations in books
IS 1275 : 2018	Information and documentation — Guidelines for the content, organization and presentation of indexes (<i>second revision</i>)	SP 46 : 2003	Engineering drawing practice for schools and colleges

ANNEX B*(Foreword)***COMMITTEE COMPOSITION**

Publication & Graphic Technology, MSD 06

<i>Organization</i>	<i>Representative(s)</i>
Guru Jambheshwar University, Hissar	DR ANJAN KUMAR BARAL (<i>Chairperson</i>)
Authentication Solution Providers Association (ASPA) Former Hologram Manufacturers Association of India, New Delhi	SHRI CHANDER SHEKHAR JEENA SHRI NITYANAND SHENOY (<i>Alternate</i>)
Avantika Printers Private Limited, New Delhi	SHRI MUKTNATH PANDEY
Central Pulp and Paper Research Institute (CPPRI), Saharanpur	SHRI SANJAY TYAGI SHRI R. D. GODIYAL (<i>Alternate</i>)
Delhi Printers Association, New Delhi	SHRI B. D. MENDIRATTA SHRI SUNIL JAIN (<i>Alternate</i>)
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Directorate General of Quality Assurance (DGQA), Ministry of Defence, New Delhi	COL M. MURALIDHARAN SHRI JANARDHAN K. (<i>Alternate</i>)
Future Schoolz	SHRI KULAKKADA PRADEEP SHRI JOSE THOMAS (<i>Alternate</i>)
Government Institute of Printing Technology, Mumbai	SHRI SAMEER DESHPANDE
Indian Printing Packaging and Allied Machinery Manufacturers Association (IPAMA), Noida	SHRI S. DAYAKAR REDDY SHRI PRASHANT VATS (<i>Alternate I</i>) SHRI NAVEEN GUPTA (<i>Alternate II</i>)
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Manipal University, College of Printing, Manipal	SHRI AMRUTHARAJ H. KRISHNAN SHRI RAMNATH SHENOY (<i>Alternate</i>)

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RSG Solutions, New Delhi	SHRI ISHANT KALKAL
The Department of Printing Technology, Anna University, Chennai	DR K. SENTHIL VADIVU
The Regional Institute of Printing Technology, Jadavpur, Kolkata	PROF SHANKHYA DEBNATH
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Member Secretary
SHRI ASHISH V. UREWAR
SCIENTIST 'C'/DEPUTY DIRECTOR
(MANAGEMENT AND SYSTEMS), BIS

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website- www.bis.gov.in or www.standardsbis.in.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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